

## ABSTRACT OF THE DISCLOSURE

5        A decision feed back equalizer is proposed, in which two feed  
back routines are provided for one symbol-preceding decided data.  
The signal space is separated into decidable areas and  
uncertainty areas in the present invention. Each of decidable  
10        areas is an area where a distance between any point in the  
decidable area and the signal point is small . Each uncertainty  
areas is an area where a distance between any point in the  
uncertainty area and the signal point is large. In a case where  
the one symbol-preceding equalized signal exists in a decidable  
15        area, since the one symbol-preceding decided data is presumed to  
be correct, the decided data is fed back. On the other hand, in a  
case where the one symbol-preceding equalized signal exists in an  
uncertainty area, since the one symbol-preceding decided data are  
presumed to be error, the decided data are not fed back, while the  
one symbol-preceding decided data is so selected from all the  
20        predicted symbol-preceding decided data that the instant  
equalized data exists in the decidable area. The decided data  
selected is fed back.

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